

CASE REPORTS

Angiofollicular Mediastinal Lymph Node Hyperplasia

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LOCALIZED mediastinal lymph node hyperplasia resembling thymoma was first reported by Castleman in 1954.¹ Castleman, Iverson and Menendez² reported 13 more cases from the Massachusetts General Hospital and elsewhere in 1956. The term "angiofollicular lymph node hyperplasia" was coined by Harrison and Bernatz³ in 1963 when they reported 28 cases including three of their own. Timme⁵ described angiofollicular hyperplasia of an abdominal lymph node in 1965.

In most of the previously recorded cases, the lesion has been intrathoracic, either mediastinal or hilar. In addition to Timme's case in abdominal lymph nodes, four other reports concerned extrathoracic lesions.^{1, 2}

In approximately one-half of these cases there were no symptoms. Symptoms, when present, resulted from compression of a bronchus that in turn caused infection of the distal lung. The sexes were equally involved and the patients were from 13 to 55 years of age, the majority being under 40. The lesions presented as solitary masses, varying in size up to 14 cm. in diameter.

The nature of the lesion is controversial, but most workers believe that the lesions are benign and, in the majority of cases, arise from lymph nodes. The lesions have not recurred even after incomplete removal. In reports in the literature, some patients have had roentgenographic evidence of tumours for five or more years before operation.

The patient, a white woman, was 41 years of age at the time of her operation. At the age of 18, she was told she had a "lesion" in the right side of her chest (Fig. 1). Since then she has had regular chest radiographs through the tuberculosis survey. Seven years previously, thoracotomy was advised but refused. During the six months before admission she had had a constant feeling of fullness in her chest. She had lost 10 lbs. in the two months before admission. She had no other complaints.

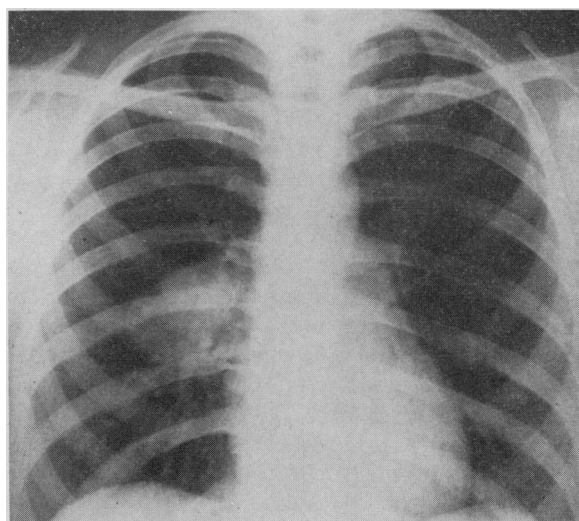


Fig. 1.—Posteroanterior chest roentgenogram taken in 1945; patient aged 20 (21 years before admission).

Her blood pressure was 140/65 mm. Hg and she had a grade II diastolic murmur along the left sternal border, as well as a short, grade I, early and mid-systolic murmur with ejection click in the aortic area.

The chest film revealed an irregular shadow at the right hilum, without calcification, measuring 5 x 6 cm. (Figs. 2a and 2b). The electrocardiograph showed slight left ventricular hypertrophy. The hemoglobin was 11.4 g. per 100 ml. The nucleated blood cell count was 3400 per c.mm. with a normal differential.

At thoracotomy on January 13, 1966, a lobulated tumour was found at the right hilum. It formed a "cast" around the middle lobe hilum and between the vessels. It was firm, grey, friable and very vascular. On its medial side it extended to the pericardium. There were numerous soft lymph nodes adjacent to it and on its periphery.

An attempt was first made to enucleate the tumour, but because of its proximity to the middle lobe hilum, the middle lobe was removed with the mass.

She had an uneventful recovery and is well five months after operation.

Pathological Aspects

The lesion was an irregularly lobulated mass weighing 36 g. and measuring 5.5 x 4.0 x 3.0 cm.

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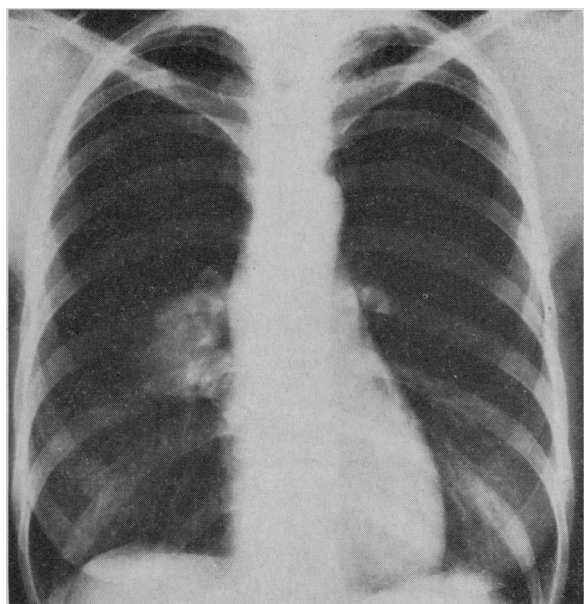


Fig. 2a.—Posteroanterior chest roentgenogram on admission.

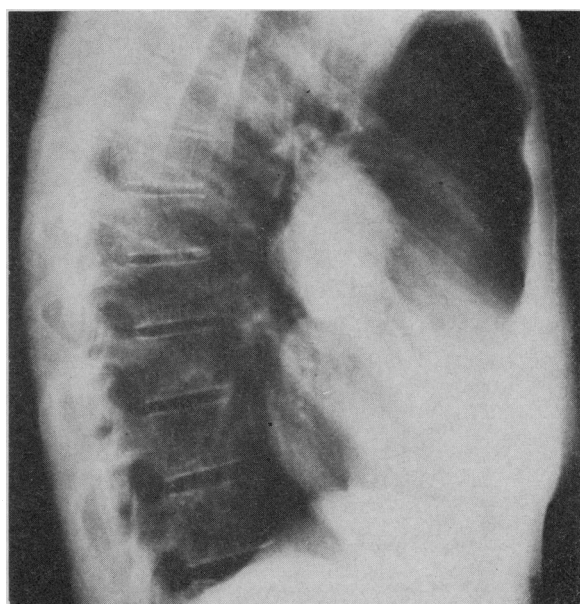


Fig. 2b.—Right lateral chest roentgenogram.

Its outer surface was partly covered by a thin, dark-pink capsule (Fig. 3), and the cut surface presented a homogeneous, pale yellowish-grey granular appearance. The lesion was moderately firm. The middle lobe was unremark-

able. Microscopically the mass possessed the features originally described by Castleman and his associates and subsequently referred to as "angiofollicular hyperplasia". The appearances were uniform throughout and there were numerous "lymph

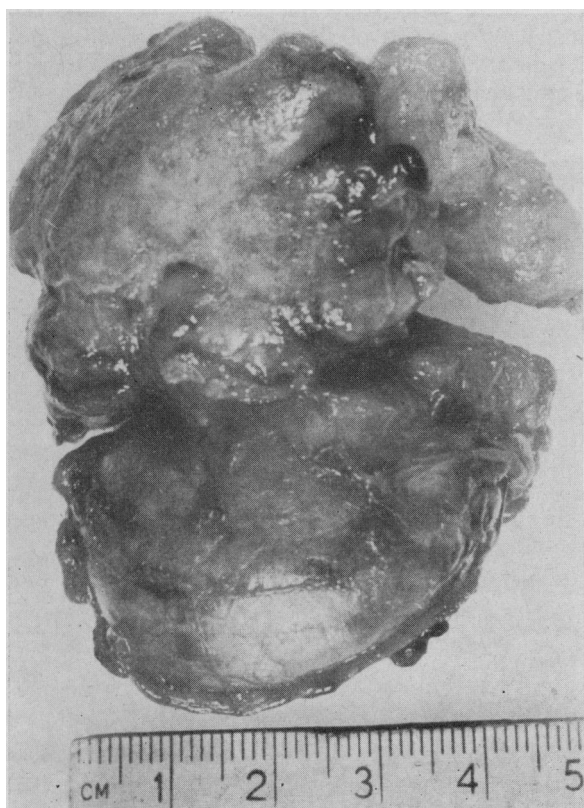


Fig. 3.—Hilar mass after removal. The outer aspect is slightly lobulated and partially encapsulated.

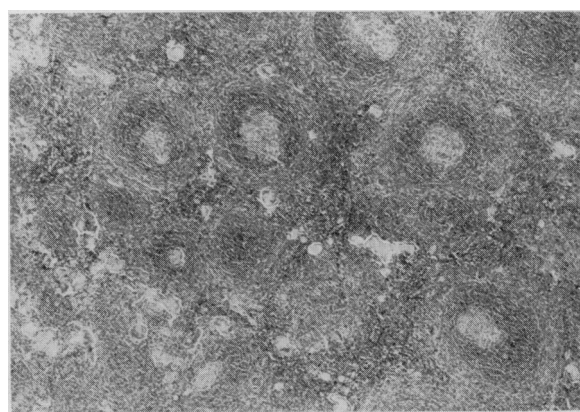


Fig. 4.—This low-power view demonstrates the numerous "follicles" with "germinal centres" and the hyaline material accompanying the vessels in the space between follicles. (Hematoxylin-phloxine-saffron (HPS) stain.)

follicles" (Fig. 4). These "follicles" generally were moderately small and had "germinal centres" that varied somewhat in size and were composed of large pale cells with big vesicular nuclei. Areas of hyalinization were frequent among these cells, producing an appearance superficially resembling a Hassall's corpuscle of the thymus gland (Fig. 5). In some of the "germinal centres", a blood vessel could be recognized undergoing varying stages of hyalinization. Not infrequently, a vascular structure could be traced from the periphery of the follicle into

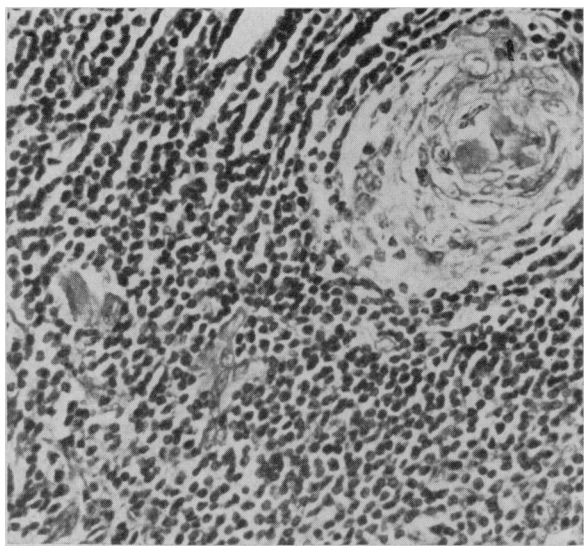


Fig. 5.—Hyaline material among the large pale cells in a "germinal centre" superficially resembles a Hassall's corpuscle of the thymus. At the left of the field outside the "follicle" are seen some of the endothelial cells and basement membranes of vascular channels. (HPS stain.)

its centre (Fig. 6)—like a penicilliary arteriole entering a Malpighian body in the spleen. The varying degrees of hyalinization noted in the walls of these vessels presumably formed the hyaline masses frequently found in the midst of the "germinal centres". Surrounding the "germinal centres" there was a peculiar lamination of mature lymphocytes arranged in uncommonly regular, concentric rings (Fig. 7). Between these "follicles" there was an infiltration of lymphocytes, some reticulum cells and occasional eosinophils, among which were numerous capillary channels often having considerable hyalinization of their walls (Fig. 5). Also noted were irregular small masses and cords of hyalinized material which may have represented previous vascular channels (Fig. 8).

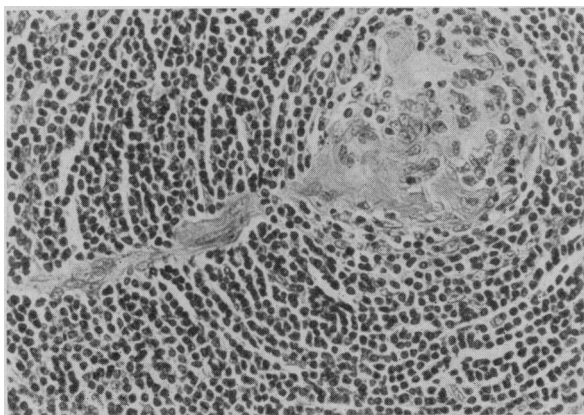


Fig. 6.—A higher-power view of the "follicle" seen in Fig. 5. Note the lamellar arrangement of the lymphocytes. A cord of endothelial cells represents a vascular channel extending into the "germinal centre" in a manner reminiscent of a penicilliary arteriole in the spleen. (HPS stain.)

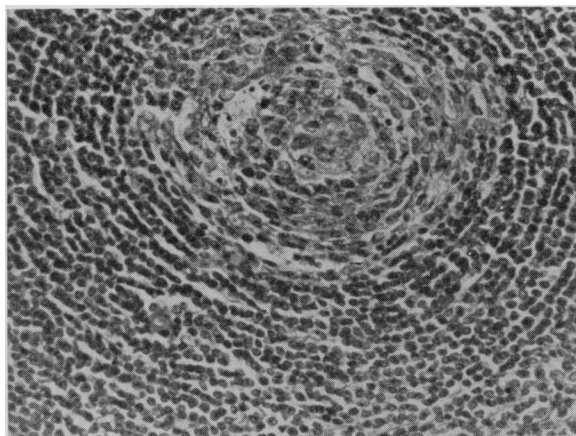


Fig. 7.—This is a representative "follicle" with regular lamellae of lymphocytes in the periphery and large pale cells in the centre. (Periodic acid-Schiff stain (PAS).)

On special stains, there was some variability in the staining reaction of the hyaline material. With hematoxylin and eosin, the material varied in intensity of staining from a moderately pale to a brightly eosinophilic appearance. With a Masson stain (hematoxylin, fuchsin-Ponceau dextylidine and aniline blue) it was slightly irregular, usually taking the connective tissue dye and staining blue, but in other patches it was a bright red. With Congo red, some portions of the hyaline material had a very slight affinity for this dye; however, in polarized light these areas were not birefringent, while the unstained portions of the hyalin were weakly birefringent. Some of the hyaline material had a very slight metachromasia with crystal violet.

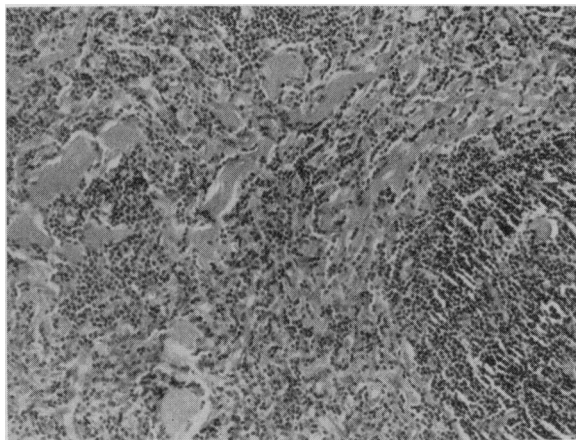


Fig. 8.—Many vascular channels and irregular hyaline masses are found between the "follicular" structures. (H & E stain, x 160.)

DISCUSSION

The nature of the lesion is controversial. Castleman, Iverson and Menendez² consider it is a form of chronic, non-specific lymphadenitis. Zettergren⁶ thinks the lesion is a benign neo-

plasm, and Lattes and Pachter⁴ suggest that it is either a hamartoma or choristoma. The latter consider, but dismiss as unacceptable, the possibilities that the lesions are accessory spleens, hemo-lymph nodes or hyperplastic lymph nodes. The lesions have not recurred even after incomplete removal, and it is universally accepted that they are benign. With few exceptions (quoted by Lattes and Pachter), they are found in lymph node regions and are assumed to arise from lymph nodes even though they do not have any

of the normal lymph nodal sinus or true follicular structures.

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Endogenous Gas Gangrene:

A Report of Three Cases

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ENDOGENOUS gas gangrene infections have been reported infrequently in the surgical literature. Three patients with gas gangrene of the scrotum and perineum have recently been encountered. A review of the literature revealed only four similar case reports. Analysis of these seven patients indicates that gas gangrene of the perineum and scrotum is a distinct complication of perianal abscess and fistula.

In 1954, Sterling *et al.*¹ reported two patients with perianal abscess who developed gas gangrene of the perineum and scrotum. Both survived. In 1965 Ahmed² described two similar patients, one of whom died from severe infection and shock.

CASE 1.—A 48-year-old man was admitted to hospital on September 21, 1964, after an eight-day history of burning pain in the perianal region. He was well nourished but appeared toxic. His oral temperature was 101.3° F., pulse 102 per minute, and blood pressure 134/80 mm. Hg. Rectal examination was painful, and a small firm mass was palpated in the posterior anal wall. On the evening of admission the patient was taken to the operating-room, where a perianal abscess was drained. A piece of bone, 2 cm. by 2 cm., was removed from the abscess. The resultant cavity, 3 cm. in diameter, was debrided and packed open. The following

morning, the patient's condition had deteriorated. His temperature was 103° F. (per os). The scrotum was swollen and inflamed. There was crepitus in the perineum, scrotum and lower abdominal wall. The rapidity of onset and spread of the infection suggested gas gangrene due to clostridial organisms. Ten million units of crystalline penicillin and 1 g. chloramphenicol were administered intravenously, and that evening the patient was explored and further debridement was carried out in the operating-room. At this time another abscess was located in the anterior wall which communicated with the original abscess by a fistulous tract. Debridement of the scrotal wall, perianal skin and subcutaneous tissue, as well as the skin and subcutaneous tissue of the lower abdominal wall, was carried out. The debrided area contained foul-smelling pus, grey necrotic tissue and bubbles of gas. Stained smears of the pus revealed gram-positive rods. The wound was packed open with hydrogen peroxide dressings. A right-sided transverse colostomy and a tracheostomy were performed. Postoperative therapy consisted of crystalline penicillin, 10,000,000 units, chloramphenicol 1 g., and ampicillin 1 g., every six hours, polyvalent equine anti-gas gangrene serum (Lederle) 4 units every six hours, and human anti-tetanus globulin 500 units. Hyperbaric oxygen at three atmospheres pressure absolute was administered in four sessions of one and one-half hours each. The first session started immediately before debridement. Decrease in toxicity was apparent after the second session of hyperbaric oxygen. The wound formed healthy granulation tissue and skin grafting was not required. The patient was discharged 44 days after admission.

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